Notebook Series -- Notebooks by Experimenters Other Than Edison
General Experiment Books -- G. E. Hart Books
Notebook, N-20-04-28

This notebook was used by George E. Hart during the period April 1920-July 1921 for experimental notes on a variety of subjects. The experiments are numbered from 562 to 660. The first part of the book consists of notes on primary battery experiments, similar to those in N-20-01-12.1 [not selected] in Battery Experiments—Experimenters' Books—H. E. Thayer Books. Beginning with Experiment 606 is a series of entries pertaining to annealing work with storage batteries. These are followed by experiments (613-632) to improve the wax master for disc records. At the end of the book is a series of notes describing experiments to develop a method of purifying commercial graphite for use in disc record manufacture. The notes indicate that Edison was directing Hart's work, and some of the entries include notations by Hart regarding Edison's instructions, comments, or contributions. A communication from Edison to Hart has been inserted into the book. The front cover is labeled "George E Hart #3." The pages are unnumbered. Approximately 100 pages have been used.

George E. Hart
4-28-20

4-28-20

#562

Made some Magnesium plates 1/16" thick conty Light calcined Magnesium Oxide and China Clay, using 1/2 cc H_2O, and different pressures.

Results

	Mg.	H_2O	China Clay	Pressure	Remarks
1	5.15 gms	1/2 cc	1.75 gms	200 □"	OK
2	5.15		1.75	300 □"	OK
3	5.15		1.75	400 □"	OK
4	5.15		1.75	500 □"	OK
5	5.15		1.75	600 □"	OK
6	5.15		1.75	700 □"	OK
7					

4-28-20

#563

Made some Magnesium plates 1/16" thick conty. Light calcined Magnesium Oxide, and China Clay, also 1/2 cc H_2O, just enough pressure to form a shape

Results

	MG	H_2O	China Clay	Pressure	Remarks
1	5.6	1/2 cc	1.4	Just Enough to form a shape	OK
2	5.6		1.4		OK
3	5.6		1.4		OK

4-28-20

#564

Made some Magnesium plates 1/8" thick conty. Magnesium Oxide and China Clay, 1/2 cc H_2O.

	MG	H_2O	China Clay	Pressure	Remarks
1	5.15 gms	1/2 cc	1.75 gms	700 □"	OK
2	5.15		1.75	700 □"	OK
3	5.15		1.75	700 □"	OK

4-29-20

#565

(509)

Discharging two (2) small round CuO plates (180 mesh B.L.) 1/16" thick, dried & baked the Reg. way, 27 grms CuO, 2 grms dehy. Copper Sulphate and 1½ cc 20% NaOH, discharged between three (3) Reg. Zincs.

Results

Date	Time	Hrs	Rate MIL. AMP	A-H	VOLTS	°F
4-29-20	4.30		400			
4-30-20	8.30	16		6.4	62	65
5-1-20	8.30	40		16.0	60	63
5-2-20	11.30	43		17.2	60	63
5-2-20	11.30 P.M.	65		26.0	50	

Run Over

Remarks

Copper - No Change

Zincs - Slight change in color, dark gray

Electrolyte - Clear

Sediment - None

4-29-20

#566

(510)

Discharging two (2) small round Cu plates 1/16" thick, same as #565

Results

Date	Time	Hrs	Rate Milli Amp	A-H	Volts	°F
4.29.20	4.30		400			
4-30-20	8.30	16		6.4	62	65
5-1-20	8.30	40		16.0	61	63
5-1-20	11.30 A.M.	43		17.2	60	63
5-2-20	12.30 AM	66		26.4	50	
		Run Out				

Copper - No Change

Zinc - Slight change in color, dark gray

Electrolyte - Clear

Sediment - None

(11)

4-29-20

#567

(511A)

Discharging two (2) small round Cell plates 1/8" thick, conty 50 grms Cell (150 mesh S.L) 4 grms Bdy. Copper Sulphate, 3 CC NaOH 20% in each dried and baked the Reg. way. This was a Special test using 3 zincs.

Results

Date	Time	Hrs	Rate MILLIAMP	A-H	VOLTS	°F
4-29-20	4.30		400			
4-30-20	8.30	16		6.4	62	65
5-1-20	8.30	40		16.0	61	63
5-3-20	8.30	88		35.2	60	69
5-4-20	8.30	112		44.8	59	69
5-5-20	8.30	136		54.4	56	55
5-6-20	8.30	160	.375	63.8	52	59
5-6-20	1.30 A.M.	165		65.8	50	75
		Run Out				

Remarks

Copper - No Change

Zincs - Slight change in color, dark gray

Electrolyte - Clear

Sediment - Very few Zn peelings

4-29-20

#568

(512)

Discharging two (2) small round Cell plates 1/8" thick, data on #567

Date	Time	Hrs	Rate MILIAMP	A-H	VOLTS	°F
4-29-20	4.30		400			
4-30-20	8.30	16		6.4	62	65
5-1-20	8.30	40		16.0	61	63
5-3-20	8.30	88		35.2	60	69
5-4-20	8.30	112		44.8	59	69
5-5-20	8.30	136		54.4	57	55
5-6-20	8.30	160	.375	63.8	52	59
5-6-20	1.30 AM	165		65.8	50	75
		Run	Out			

Remarks

Copper - No Change
Zinc - Slight change in color, dark gray
Electrolyte - Clear
Sediment - Very little for pealings

4-30-20

#569

Made some small round CuO plates cont. 100 gms CuO (180 mesh S.L.) 8 gms dehy. Copper Sulphate 600 NaOH 20%, dried and baked the Reg. Way. This is a Regular mix and also the Reg. plate.

Results

1400°F 5hrs	1400°F 5hrs	1400°F 5hrs
1400°F 5hrs	1400°F 5hrs	1400°F 5hrs
1400°F 5hrs	1400°F 5hrs	1400°F 5hrs
1400°F 5hrs	1400°F 5hrs	1400°F 5hrs

5-1-20

#570

Made some small round Magnesium plates contg. 80% Light Calcined Magnesium Oxide and 20% China Clay, 1/2 CC H_2O, used 400 lbs pressure.

	MgOxide	H_2O	China Clay	Pressure	Remarks
1	5.6 grms	1/2 CC	1.4 grms	400#	
2	5.6 "	"	1.4 "	"	
3	5.6 "	"	1.4 "	"	
4	5.6 "	"	1.4 "	"	
5	5.6 "	"	1.4 "	"	
6	5.6 "	"	1.4 "	"	
7	5.6 "	"	1.4 "	"	
8	5.6 "	"	1.4 "	"	
9	5.6 "	"	1.4 "	"	
10	5.6 "	"	1.4	"	

5-3-20

#571
(513)

Discharging a Reg. small round Cu(O) plate
cont. 100 grms Cu(O) (180 mesh S.C) 8 grms Dehy.
Copper Sulphate, 6 CC NaOH 20%, dried
and baked the Reg. way. This was a Special
for Mr E. as he burnished this plate
and marked it #1 or better Coppering

#1 Better Coppering

Date	Time	Hrs	Rate MILLAMP	A-H	VOLTS	°F
3-20	12.30		400			
4-20	8.30	20		8.0	60	69
5-20	8.30	44		17.6	57	55
6-20	8.30	68		27.0	55	59
7-20	8.30	92		36.8	53	64
8-20	8.30	116		46.4	50	63
8-20	9.30 A.M.	117		46.8	50	63
		Run	out			

Remarks

Copper - No Change

Zinc - Slight corrosion

Electrolyte - Clear
Sediment - Few Zn flealings

5-3-20

#572

(514)

Discharging a Reg. small round Cu plate cont. 100 grms Cu (180 mesh S.L.) 8 grms dehy. Copper Sulphate, 600 NaOH 20%, dried and baked the Reg. way. This was a special test for Mr E. as he burnished this plate and marked it #2 or still better burnishing.

#2 Still Better Coppering

Date	Time	Hrs	Rate MIL.AMP	A-H	VOLTS	°P
5-3-20	12.30		400			
5-4-20	8.30	20		8.0	60	69
5-5-20	8.30	44		17.6	56	55
5-6-20	8.30	68		27.0	55	59
5-7-20	8.30	92		36.8	53	64
5-8-7-20	8.30	116		46.4	50	63
5-8-20	9.30 A.M	117		46.8	50	63
	Run Out					

Remarks

Copper - No Change

Zinc - Slight corrosion

Electrolyte - Clear

Sediment - Few Zn peelings

5-3-20

#573

(515)

Discharging a Reg. small-round Cell plate cont. 100 grms Cell (180 mesh S.L) 8 grms dehy. Copper Sulphate, 6 cc NaOH 20%, dried and baked the Reg. way. This was a Special test for Mr E. as he burnished this plate and marked it #3 or more still better burnishing.

#3 More Still better Coppering

Date	Time	Hrs	Rate Mil. AMP	A-H	VOLTS	% P
5-3-20	12.30		400			
5-4-20	8.30	20		8.0	60	69
5-5-20	8.30	44		17.6	55	55
5-6-20	8.30	68		27.0	54	59
5-7-20	8.30	92		36.8	52	64
5-8-20	8.30	116		46.4	51	63
5-8-20	9.30 AM	117		46.8	50	63
		Run Out				

Remarks

Copper - No change

Zinc - Slight corrosion

Electrolyte - Clear

Sediment - Few Zn peelings

(25)

5-3-20

#574

(516)

Discharging a Reg. small round Cell plate cont. 100 grms Cell (180 mesh S.L.) 8 grms Dehy. Copper Sulphate, 600 NaOH 20%, dried and baked the Reg. way. This was a special test for Mr E. as he burnished this plate and marked it #4 or still more better burnishing

#4 Still More better Coppering

Date	Time	Hrs	Rate MIL. AMP	A-H	VOLTS	°F
5-3-20	12.30		400			
5-4-20	8.30	20		8.0	60	69
5-5-20	8.30	44		17.6	55	55
5-6-20	8.30	68		27.0	55	59
5-7-20	8.30	92		36.8	53	64
5-8-20	8.30	116		46.4	50	63
5-8-20	9.30 AM	117		46.8	50	63
		Run	Out			

Remarks

Copper - No Change

Zinc - Slight corrosion

Electrolyte - Clear

Sediment - Few Zn flocculenge

5-3-20

#575
(517)

Discharging a small round Cu plate
cont. 100 grms Cu (180 mesh S.G.) 8 grms
Poly. Copper Sulphate, CCC Mark 20%, dried
and baked the Reg. way. This was a special
test for Mr E. as he furnished this plate
and marked it #5 using Very fine Zinc.

#5 Very Fine Zinc

Date	Time	Hr	Rate Mil. Amp	A-H	Volts	°F
5-3-20	12.30		400			
5-4-20	8.30	20		8.0	59	69
5-5-20	8.30	44		17.6	55	55
5-6-20	8.30	68		27.0	53	59
5-7-20	8.30	92		36.8	52	64
5-8-20	8.30	116		46.4	50	63
5-8-20	9.30 AM.	117		46.8	50	68
		Run	Out			

Remarks

Copper - No Change

Zinc - Slight corrosion

Electrolyte - Clear

Sediment - Fine Zn peelings

5-7-20

576

Made some small round CuO plates 1/8" thick contg. 50 gms CuO (180 mesh S.G.) 4 gms Dehy. Coppr Sulphate, 3 cc NaOH 20% dried and baked the Reg. way. This was a special run as plates were 1/8" thick

Results

1400°F 5 hrs	1400°F 5 hrs	1400°F 5 hrs
1400°F 5 hrs	1400°F 5 hrs	1400°F 5 hrs
1400°F 5 hrs	1400°F 5 hrs	1400°F 5 hrs
1400°F 5 hrs	1400°F 5 hrs	1400°F 5 hrs

5-5-20

#577

Made some small round Cull plates conty Reg. mix, 100 grms Cull (180 mesh S.L.) 8 grms Dehy. Copper Sulphate, CCC Mat'l #20%, dried and baked the Reg. way.

Results

1400°F 5hrs	1400°F 5hrs	1400°F 5hrs
1400°F 5hrs	1400°F 5hrs	1400°F 5hrs
1400°F 5hrs	1400°F 5hrs	1400°F 5hrs
1400°F 5hrs	1400°F 5hrs	1400°F 5hrs

5-6-20

#580

Made some small round CuO plates contg 50 grms CuO (180 mesh S.L.) 4 grms dehy. Copper Sulphate, 3 cc NaOH, dried and baked the Reg. way. This was a Special run as plates were 1/8" thick

Results

1400°F 5hrs	1400°F 5hrs	1400°F 5hrs
1400°F 5hrs	1400°F 5hrs	1400°F 5hrs
1400°F 5hrs	1400°F 5hrs	1400°F 5hrs
1400°F 5hrs	1400°F 5hrs	1400°F 5hrs

5-7-20

#581

(511-A)

Discharging two (2) small round CuO plates 1/8" thick, cont. 50 gms CuO (180 mesh S.G.) 8 gms Dehy. Copper Sulphate, 3 cc NaOH 20% mech. dried and baked the Reg. way. This was a special test of my own as I put new CuO plates and used old Zincs and some solution that was in old cell.

Date	Time	Hrs	Rate MIL. AMPS	A-H	Volts	°F
5-7-20	9.30		400			
5-8-20	8.30	23		9.2	57	63
5-10-20	8.30	71		28.4	56	
5-11-20	8.30	95		38.0	55	
5-12-20	8.30	119		47.6	53	
5-13-20	8.30	143		57.2	50	
		Out		57.2 65.8 123.0	hrs	

Remarks

Copper - No Change

Zinc - Slight corrosion, turning dark gray in color

Electrolyte - Clear

Sediment - Few Zn peelings

5-7-20

#582

(512-A)

Discharging two (2) small round Cu plates 1/8" thick cont. 50 grms CuO (150 mesh S.L) 8 grms Dry. Copper Sulphate, 3gc NaOH 20% in each jar. Ran and Called the Reg. way. This was a Special test of my own as I put New Cu plates between 3 old Reg. Zincs and New solution.

Date	Time	Hrs	Rate MIL. AMP	A-H	VOLTS	°F
5-7-20	9.30		400			
5-8-20	8.30	23		9.2	62	63
5-10-20	8.30	71		28.4	60	63
5-11-20	8.30	95		38.0	58	61
5-12-20	8.30	119		47.6	57	58
5-13-20	8.30	143		57.2	56	62
5-14-20	8.30	167		66.8	53	58
5-14-20	6.30 P.M	177		70.8	50	75
		Run Out				

Remarks

Copper - No Change

Zinc - Very little corrosion, dark gray in color

Electrolyte - Clear

Element - Very little Zn peelings

5-8-20

#583

Discharging a two Cu0 plate 1/8" thick cont. reg. mix of Cu0 (180 mesh c.c.) and sch. Copper Sulphate and 20% Nat'l, dried and baked the Reg. way. This was a special test of my own as Cu0 plates were only 1/8" thick and placed in between three (3) Reg. Zincs, that were discharged, filed down and Re-Amalgmated

Results

Date	Time	Hrs	Rate MilAmps	A-H	Volts	°F
5-11-20	11.30 A		400			
5-12-20	8.30	21		8.4	62	58
5-13-20	8.30	45		18.0	60	62
5-14-20	8.30	69		27.6	60	58
5-15-20	8.30	93		37.2	60	63
5-17-20	8.30	141		56.4	56	68
5-18-20	8.30	165	.370	66.0	52	60

Remarks

Copper - No Change

Zinc - Very little corrosion

Electrolyte - Clean

Sediment - Very few Zn flakings

C-10

5-8-20

#584

Discharging a Reg. large CuO plate, contg. reg. mix of CuO (180 mesh S.L) and dehy. Copper Sulphate, using 20% NaOH, dried and baked the Reg. way. This was a Special test of my own as I cut large CuO plate in Half and alternating between three (3) Reg. 500 zincs.

Date	Time	Hrs	Rate AMPS	A-H	Volts	°F
5-7-20						
5-8-20	8.30					

5-18-20

#584

Discharging two small round CuO plates 1/8" thick, conty 50 grms CuO (150 mesh S.L) 4 grms Dehy. Copper Sulphate, 300 NaOH 20% in each plate, dried + baked the Reg. way. This was a Special test of my own as I used three (3) Zincs 1/32" thick.

Date	Time	Hrs	Rate MIL.AMP	A-H	VOLTS	°F
5-17-20	4.30 P.M		400			
5-18-20	8.30	16		6.4	60	60
5-19-20	8.30	40		16.0	58	60
5-20-20	3:30 A.M	59		23.6	50	
5-20-20		Run	Out			

Copper - No Change

Zinc - All eaten away, too thin.

Electrolyte - Clear

Sediment - Few Zn flakings

(145)

5-22-20

#585
(167)

Discharging a Special Oxide plate 2 3/8" x 3 7/8" between two (2) Reg. small Jumes. Cu0 plate cont. 128.8 gms Cu0 (180 mesh S.L.) 8 CC NaOH 20%. 11.2 gms dehy. Copper Sulphate, dried in Special dryer at 400°F for two (2) hrs., baked in Furnace for 5 hrs at 1400°F.

Reg. small Jume

Date	Time	Hrs	Rate MIL.AMP	A-H	VOLTS	°F
5-22-20	11.00		400			
5-24-20	8.30	45	350	17.1	59	62
5-25-20	8.30	69	360	26.4	59	69
5-26-20	8.30	93	400	36.0	57	74
5-26-20	7.30 PM	104	400	40.4	50	

Run Out

Remarks

Copper - No Change

Zinc - No Change

Electrolyte - Clear
Sediment - None

5-22-20

#586

(168)

Discharging a Special Cell plate sig. 2 3/8 x 3 7/8 between two (2) small Reg. Zincs, CuO plate weight. 128.8 grms Cell (180 mesh S.L.) 11.2 grms Anhy Copper Sulphate, 8 CC NaOH 20%, dried at 400°F in Special dryer for two (2) hrs, baked in Furnace for 5 hrs at 1400°F

Reg. small Zinc

Date	Time	Hrs	Rate MIL. AMP	A-H	VOLTS	°F
5-22-20	11.00		400			
5-24-20	8.30	45	350	17.1	60	63
5-25-20	8.30	69	360	26.4	60	69
5-26-20	8.30	93	400	36.0	58	74
5-26-20	9.30 P.M.	106	400	41.4	50	

Run Out

Remarks

Copper - No Change

Zinc - No Change

Electrolyte - Clear

Sediment - None

5-24-20

#587

(169)

Discharging a Special CuO plate 2 3/8" x 3 7/8" between two (2) Special Zincs 1/16" thick and same size as plate. CuO plate contains 128.5 grms CuO (150 mesh S.L.) 11.2 grms H chg Copper Sulphate 8CC NaOH 20%, dried in Special dryer for two (2) hrs at 400°F, baked in Furnace at 140°F for 5 hrs.

1/16" Zinc

Date	Time	Hrs	Rate MILLI-AMP	A-H	VOLTS	°F
5-24-20	4.30		400			
5-25-20	8.30	16		6.4	62	69
5-26-20	8.30	40		16.0	61	74
5-27-20	8.30	64		25.6	60	66
5-28-20	8.30	88		35.2	57	64
5-29-20	5.30 P.M.	109		43.6	50	

Run Out

Remarks

Copper - No Change

Zinc - Slight corrosion

Electrolyte - Clear

Sediment - Very little Zn peelings

#5-25-20

#588

Discharging a Special Cu plate 2 3/8" x 3 7/8" between two (2) Special Zincs 1/8" thick same size as Cu plate. Cu plate contains 128.8 gms Cu (180 mesh S.G.) 11.2 gms Poly Copper Sulphate, 800 NaOH 20%, dried & baked the Reg way.

1/8" zinc

Date	Time	Hrs.	Rate MIL. AMPS	A-H	VOLTS	°F
5-25-20	3.30		400			
5-26-20	8.30	17		6.8	62	63
5-27-20	8.30	41		16.4	60	66
5-28-20	8.30	65		26.0	60	64
5-29-20	8.30	89		35.6	57	66
5-30-20	5.30 P.M	98		39.2	50	
		Run Out				

Remarks

Copper - No Change

Zinc - Slight corrosion

Electrolyte - Clear

Sediment - Very little Zn peelings

6-8-20

#589

Discharging 2 Special Cu O plate 3 7/8"x4 7/8" between three (3) Reg. 500 zincs. Cu O plates are 1/4" thick conty. 239 grms Cu O (155 mesh S.G.) 21 grms Dehy. Copper Sulphate, 16 CC NaOH 20% dried and baked the Reg. way. at 1400°F

Results

Date	Time	Hrs	Rate AMPS	A-H	VOLTS	°F
6-8-20	3.30		3			
6-9-20	8.30	17		61	58	63
6-10-20	8.30	41		123	56	65
6-11-20	8.30	65		195	55	64
6-12-20	8.30	89		267	54	63
6-12-20	2.30AM	107		321	50	
			Run Out			

Remarks

Copper - No Change

Zinc - Very slight corrosion

Electrolyte - Clear

Sediment - Very little Zn peelings

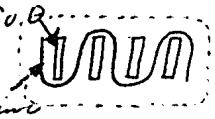
6-28-20

#590

Discharging 4 Special Cu O plates 3 1/8" x 4 1/8" between a Special Roll Zinc designed by Constable Chief Eng. Cu O plates are 1/4" thick contg. 239 gms Cu O (180 mesh S.L.) 21 gms dehy. Copper Sulphate 16 CC NaOH 20%, in each plate, dried & baked the Reg. way at 1400°F

Pressure 1000 lbs on gage

View of cell



Results

Date	Time	Hrs	Rate Amperes	VOLTS	A-H	°F
6-28-20	11.30		3	62		
6-29-20	8.30	21		62	63	76
6-30-20	8.30	45		60	135	76
7-1-20	8.30	69		59	207	73
7-2-20	8.30	93		57	279	74
7-3-20	8.30	117		56	351	71
7-6-20	8.30	165		55	495	68
7-6-20	5.30	173		55	519	85
7-7-20	8.30	189 Run Out		45	567	65

Remarks

Copper - No change in color, Cu O not all used up.

Zinc - All Eaten away

Electrolyte - Clear

Sediments - All full of Zn peelings

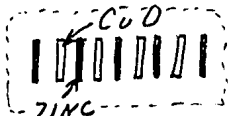
7-21-20

#591

Discharging 4 Special Cu O plates 3 7/8" x 4 7/8" between 5 Cast Zincs Reg. #500 type. Cu O plates were 1/4" thick contg. 239 grms. Cu O (180 mesh S.C) 21 grms Cu SO4, 16 CC NaOH 20% in each plate, dried and baked the Reg. was at 1400°F

Pressure 710 lbs on gage

View of cell



Results

Date	Time	Hrs	Rate amps	A-H	Volts	°F
7-21-20	2.30		3			
7-22-20	8.30	18		54	61	78
7-23-20	8.30	42		126	60	74
7-24-20	8.30	66		198	60	78
7-26-20	8.30	114		342	58	
7-27-20	8.30	138		414	55	
7-28-20	8.30	162		486	50	80

Run Out

Remarks

Coppers - No Change

Zinc - Light corrosion

Electrolyte - Clear

Sediment - Very few Zn flakings

7-29-20

#592

17

Made some CuO plates $\frac{1}{4}$" thick $3\frac{7}{8} \times 4\frac{7}{8}$" with Newly burned CuO from S.L 180 mesh plates contg. 239 grms CuO (180 mesh) 21 grms Dehy. Copper Sulphate, 16 CC NaOH 20%, dried and baked the Reg. way 1400°F for 5 hrs Made plates out of zinc from New Mexico, used 500 lbs pressure on plates

Porosity 6.2%

Results

Date	Time	Hrs	Rate AMPS	A-H	VOLTS	°F
7-29-20	3.00		3			
7-30-20	8.30	18		54	56	72
7-31-20	18.30	42		126	56	75
8-1-20	11.30	45		135	55	76
8-3-20	8.30	69		217	54	68
8-4-20	8.30	93		289	54	70
8-5-20	8.30	117		361	53	73
8-6-20	8.30	141		433	52	72
8-7-20	5.30	165		505	50	74
8-7-20	10.30	170	Out →	511	45	78

Remarks

Coppers - No change

Zinc - Very little corrosion

Electrolyte - Clear

Sediment - a few Zn flakings

(61)

8-5-20

#593

Experimenting on Primary Battery

Discharging 4 Special CuO plates 1/4" thick 3 7/8" x 4 7/8" between 5 Cast Zincs Reg. #500 Type. CuO plates contg. 239 gms CuO (180 mesh S.L.) 21 gms Cu SO4, 16 CC Nat'l 20% in each plate, dried & baked the Reg. soln at 140°F Pressure 300 lbs on gage

Porosity 7%

Results

Date	Time	Hrs	Rate Amps	A-H	Volts	°F
8-5-20	3.30		3			
8-6-20	8.30	17		51	63	75
8-7-20	8.30	41		123	61	72
8-8-20	8.30	86		267	59	76
8-9-20	8.30	113		339	56	79
8-10-20	8.30	137		411	55	78
8-11-20	8.30	161		483	53	76
8-11-20	5.30	170		510	50	89
		Run Out				

Remarks

Coppers - No change

Zincs - Slight corrosion

Electrolyte - Clear

Sediment - Very little Zn peeling

7-29-20

#594

Experiment on Primary Battery

Discharging 2 Special Reg. Cu O plates 3 7/8" x 4 7/8" between 3 Reg. Cast Zinc, Cu O plates contg. 414 gms Cu O (150 mesh S.G.) 36 gms $CuSO_4$, 27 CC Rat 2:1 in each plate, dried & baked the dry way at 140-150°. Pressure 300 lbs on gage

Porosity 6.3%

Results

Date	Time	Hrs	Rate AMPS	A-H	Volts	Temp
7-29-20	3.00		3			
7-30-20	8.30	18		54	56	72
7-31-20	8.30	42		126	56	75
7-31-20	11.30	45		135	55	76
8-3-20	8.30	69		217	54	68
8-4-20	8.30	93		289	52	70
8-5-20	5.30	117		361	52	[illegible]
8-6-20	5.30	141		433	54	[illegible]
8-7-20	8.30	168		505	50	74
8-8-20	10.30	170	Out →	511	45	75

Remarks

Copper - No Change

Zinc - Very little corrosion

Electrolyte - Clear

Sediment - Very little Zn flocculent

(over)

7-29-20

#595

Experimenting on Primary Battery
Discharging 2 - Reg. Silver Lake plates
in between 3 Reg. Zincs.

Results

Date	Time	Hrs	Rate AMPS	A-H	Volts	°F
7-29-20	3.00		3			
7-31-20	8.30	18		54	55	72
8-31-20	8.30	42		126	55	75
9-31-20	11.30	45		135	55	81
10-3-20	8.30	69		217	54	68
10-4-20	8.30	93		289	58	70
10-5-20	8.30	117		36[illegible]	53	73
10-6-20	8.30	141		43[illegible]	52	72
10-7-20	8.30	168		505	50	74
10-7-20	10.30	170	Out →	511	45	75

Remarks

Copper - Turning dark Brown in color

Zinc - Mostly all eaten away

Electrolyte - Clear
Sediment - Quiet some Zn flakings

7-29-20

#596

Experimenting on Primary Battery
Discharging 2 Special Reg. Cu Cl plates 3 7/8" x 4 7/8" between 3 Reg. cast Zincs, Cu Cl plates only.
414 gms. CuCl (180 mesh S.L.) 36 gms Cu SO_4
27 CC NaOH 20% in each plate, dried & baked the Reg. way at 1400°F. Pressure 1300 lbs on gage.

Porosity 6.3%

Results

Date	Time	Hrs	Rate AMPS	A-H	VOLTS	°F
7-29-20	3.00		3			
7-30-20	8.30	18		54	57	72
7-31-20	8.30	42		126	54	75
7-31-20	11.30	45		135	55	81
8-3-20	8.30	69		217	55	68
8-4-20	8.30	93		289	55	70
8-5-20	8.30	117		361	55	73
8-6-20	8.30	141		433	55	72
8-7-20	8.30	168		505	50	[illegible]
8-7-20	[illegible]	[illegible]	Out 7			

Remarks

Copper - No change.

Zincs - Very little corrosion

Electrolyte - Clear
Sediment - Very little Zn peelings

2-5-20

#597

Experimenting on 22 Primary Portable
Discharging 1 Reg. Silver Chloride plates
between 3 Reg. Zincs

Results

Date	Time	Hrs	Rate Amps	A-H	Volts	°F
8-5-20	3.30		3			
8-6-20	8.30	17		51	62	72
8-7-20	8.30	41		123	59	74
8-8-20	8.30	86		267	57	76
8-9-20	8.30	113		339	54	79
8-10-20	8.30	137		411	54	78
8-11-20	8.30	161		483	52	76
8-12-20	8.30	185		555	50	78
8-12-20	10.30	187		561	49	81

Run Out

Remarks

Copper - Turning slightly Brown in Color

Zinc - Mostly all eaten away

Electrolyte - Muddy

Sediment - Quiet some Zn flocking

(71)

8-5-20

#598

Experimenting on 23 Primary Battery

Discharging 2 Special Reg. Cu plates 3 7/8 x 4 7/8 between 3 Reg. East Zinc. Cu plates contg. 414 grams Cu. (180 mesh) dry 36 grams $CuSO_4$, 27 CC NaOH in each plate, dried & baked the Reg. mix at 1400°F, Pressure 300 lbs on gage.

Porosity 5.5%

Results

Date	Time	Hrs	Rate AMPS	A-H	Volts	°F
8-5-20	8.30		3			
8-6-20	8.30	17		51	62	72
8-7-20	8.30	41		123	60	74
8-9-20	8.30	86		267	58	76
8-10-20	8.30	113		339	56	79
8-11-20	8.30	137		411	54	78
8-12-20	8.30	161		483	53	78
8-13-20	8.30	185		555	51	78
8-13-20	2.30	191		573	50	
8-13-20	3.30	192 Run Out		576	45	

Remarks

Copper - No change

Zinc - Very slight corrosion

Electrolyte - Clear

Sediment - Very little Zn flocking

8-5-20

#599

1300 lbs

Experiment on Primary 24 Battery
Discharging 2 Special Reg. Cu plates
2 3/8 x 3 7/8" between 3 Reg. cast Zinc. Cu
plates contgs. 414 gms CuO (150 mesh sz.)
36 gms Cu SO4, 27 CC NaCl in each plate,
lined & baked the Reg. way at 140° F Parrafine
1300 lbs on gage

Resistance 4.5 Ω

Results

Date	Time	Hrs	Rate AMPS	A-H	Volts	E.F.
8-5-20	3.30		3			
8-6-20	8.30	17		51	62	72
8-7-20	8.30	41		123	60	74
8-9-20	8.30	86		267	55	76
8-10-20	8.30	113		339	54	79
8-11-20	8.30	137		411	52	78
8-12-20	8.30	161		483	50	76
8-13-20	8.30	185		555	50	75
8-13-20	10.30	187		561	49	81

Run Out

Remarks

Copper - No Change

Zinc - Slight corrosion

Electrolyte - Clear

Sediment - Little Zn peelings

8-31-20

600

Loading of CuO Mixer

The following is the correct way to load CuO mixer.

25 lbs CuO (180 mesh S.L.) per Min.
3.2 lbs $CuSO_4$ for 25 lbs CuO
1200 CC NaOH 20%

Weight of Silver Lake Plates 1 cell

35 oz. or 990.5 grms

Weight of Our Plates in 1 cell

33± oz. or 956 grms

Our Cell

239 grms CuO (180 mesh S.L.) 1 Plate
260 " Reg. Mix with $CuSO_4$ 15 CC NaOH 1 Plate
912 grms CuO (180 mesh S.L.) 1 Cell
1040 " Reg. Mix with $CuSO_4$ 60 CC NaOH 1 Cell

Our Mixer

25 lbs per Min.
1500 lbs " Hour
36,000 lbs " day.

9-3-20

#601

Experiment on Primary Battery

Discharging 4 small Cu(OH)2 plate 3 1/8" x 4 1/8" x 1/8" between 5 Reg. Zincon #500 Type. Cu(OH)2 plates contg. 239 grms Cu(OH)2 (150 mesh S.A.) 21 grms CuSO4 16 CC NaOH 20% in each plate, dried & baked the Reg. way at 140°F Pressure 300 lbs for 11"

Porosity 6.8%

Date	Time	Hrs	Rate 3 AMPS	A-H	Volts	°F
9-20	10.30		3			
9-20	8.30	22		66	59	68
9-20	8.30	94		272		

Remarks

9-3-20

#602

Experiment on Primary Battery

Discharge 4 small CuO plates 3 7/8" x 4 7/8 x 1/2" between 5 Reg. Cast Zincs, CuO plates contgs. 239 grms CuO (150 mesh s.c.) 21 grms Cu Sod, 18 cc NaOH 20% in each plate, dried & baked the Reg. way at 140° F. Pressure 300 lbs per □" Plate 3/16" apart.

Porosity 6.9%

Date	Time	Hrs	Rate 3 AMPS	A-H	VOLTS	°F
20	8:30		3			
9-21	8.30	18		54	57	68
9-20	8.30	90		258	57	73
9-20	8.30	110		330	56	70
9-21	8.30	132		396	55	68
10-2	8.30	150		450	55	73
10-2	8.30	159		477	55	85
10-20	8.30	183		549	50	
20	9.30	183.5	Run Out	550		

Remarks

Pos. - No Change

Neg. - Sealed and leaning on CuO plate making a Short Circuit.

Electrolyte - Muddy Color from Zinc

Sediment - Quite some Zn [illegible] of cell

9-9-20

#603

Experiment Primary Battery

Discharging 4 small CuO plates 3 7/8" x 4 7/8" x 1/4" between 5 Reg. Zincs #500 Type. CuO plates contain 239 grms CuO (180 mesh S.L.) 21 grms $CuSO_4$ 10 cc NaOH 20% in each plate, dried & baked the Reg. way at 1400 °F. Pressure 300 lbs per □"

Porosity 6.9%

Date	Time	Hrs	Rate 3-AMPS	A-H	VOLTS	°F
9-20						

Remarks

604

Experiment on Coating Steel or Iron

Tried the following experiment for Mr Colvin, using Sodium Silicate, painting it on Cast Iron and Steel, baked at 1400 F

Results

I. 2cc Sod. Silicate Solution N.G.

II 2cc Sod. Silicate Solution 2gms Litharge Very Good

III 3cc Sod. Silicate Sol. 2gms Arsenious (gms) N.G

IV 2cc Sod. Silicate Sol 2gms Chalk FAIR

V 1cc Sod. Silicate Sol. Pb glass, Litharge and NaOH. (Mixed 50gms Pb glass 20 mesh, 25gms Litharge and 25gms NaOH, fused and then mixed with Sodium Silicate Solution Good

10/1/20

605

Experiment on Primary Battery

Started to work over in Mr. Lucas Primary Battery Division from Oct. 1st 1920 to Dec. 31st 1920 instaling Copper Sulphate Finder in their Copper Oxide Plates. After proving successful in all ways Mr Edison being perfectly satisfy with my work sent for me and said that he thinks that the Primary Battery should be able to get along alright without me now and would like for me to start back at the Orange Laboratory on the 1st of the year 1921. After following out Mr Edison's instruction reported back at Orange Laboratory to him on Wednesday morning the 3rd and he said he wanted me to start on some work for the Storage Battery and then gave me my instructions what he wanted me to do.

#606

1/3/21

Experiment Kneeling Pots for Storage Battery
Started on an Enamel for Annealing pots for
Edison Storage Battery Co. in accordance to
Mr Edisons instructions.
Cut up some round pieces of steel about 1/2"
dia and 3" long and coat same with the Special
Enamel.

1. 2 gms Litharge 2 cc Silicate Soda Solution
2. " " " "
3 " " " "
4 " " " "

Results

Gave each piece the following coats and
then baked for 2 hours.

3 coats	1/4/21
2 coats	1/5/21
2 coats	1/6/21
1 coat	1/7/21

Started to bake at 11.20 A.M 1/7/21
Stopped at 5.20 P.M 1/7/21
Looked Very Good, No Signs of peeling

Started to bake at 8.15 A.M 1/8/21
Stopped at 12.15 P.M 1/8/21
Very Good, No Change

(cont'd. other side)

cont'd from #606

Started to bake at 8.15 AM 1/10/21

Stiped at 3.45 P.M 1/10/21

after baking for 17½ each piece of steel looked very good but started to show sign of peeling.

#607 1/2/20

Coated four pieces of round steel with the following.

#5. 2gms Chalk 2cc Silicate Soda Solution

#6. " " " " "

#7. " " " " "

#8. " " " " "

Results

Gave each piece 1 coat and baked for 2 hours. After baking it seems that the Chalks looks good but does not hold very good to the steel.

#608 1/5/20

Made some powder using the following mixture
50 gms Pb. glass (200 mesh)
25 gms Litharge
25 " NaOH
Mixed the above and fused it together and then ground up into fines and added some Sod. Silicate Solution to make a paint.

#9. 2 gms Pb. glass, Litharge & NaOH. 2 cc Sod. Sil. Sol.
#10. " " " " " " "
#11. " " " " " " "

Results
Gave each piece the following
1 Coat and baked 1/8/21
1 Coat and baked 1/9/21

Looked Very Good but Mr Colson thinks that we better omit the glass.

#609 1/8/20

Made some powder using the following mixture
50 gms Pb. glass (200 mesh)
25 " Litharge
25 " Nat'l
Mixed the above and fused it together, then ground up into powder and added some Sod. Silicate ~~Solution~~ to make a paint.

#12. 2 gms Pb. glass Litharge Nat'l, 2cc Sod. Silicate
#13. " " " " " "
#14. " " " " " "

Results
Gave each piece the following
1 coat and baked 1/8/20

Looked Very Good by Mr Coleman think we should omit the gms.

#610 1/11/20

Started to bake 4" disc of Cast Iron
with Litharge and Sod. Silicate Solution

#15. 4 gms Litharge 40cc Silicate Soda
Plants

Gave the following
1 coat and baked 1/11/21

Started to bake at 8.45 1/11/21
Stopped at 11.45 1/11/21

#611 1/11/20

In accordance with Mr Edison instructions tried the following.

#16. 2gms Litharge 2cc Sod. Silicate Sol.
#17. " " " " "
#18. " " " " "

Results

Gave each piece (1) heavy coat and baked for 5 hours. 12 P.M to 5 P.M 1/11/21
Gave each piece (1) light coat and baked for 5 hours 9 A.M. to 2 P.M 1/12/21
Gave each piece (1) light coat and baked for 5 hours 8.30 A.M to 1.30 P.M 1/13/20

Turned out Very Good. Mr Edison compared with a clean piece of steel and found it didn't loose any in size.

#612 1/-2/.

In accordance to Mr Edison's instructions tried the following.

#19. 2gms Borax, 2gms Litharge, 6cc Sol Sil
#20. " " " " "
#21. " " " " "

Results

Gave each piece (1) Heavy coat and baked for 2 hours 1/14/21

The above mixture is semi of thick and rather hard to paint on the stove

Gave each piece (1) light coat and baked for 5 hours 1/15/21

After showing samples of the above to Mr Edison he said to get all the [illegible] together and then we will paint [illegible] over in the Storage Battery.

#613 1/18/21

After finishing job on the lenses for Storage Battery Mr T.A. Edison started me working on the Master Wax for the Disc Records. Tried the following.

Using 50 gms of Candellila, 8 gms X from in white dish, 12 gms X from this in dish, finally 18 gms X and from this in dish.

Tried the following

Thymol
Salicylic Acid
B.C.D. Kauri
Gilsonite
Lead Stearate (free from Stearic Acid)
Naphthalen
Chloral Hydrate Crystals
Beta Naphtol
Rosin "D"
Condensite Resin (about 15% free Phenol)
Bakelite
Stearic Acid
Tar
Japan Wax
Spermaceti
Brown Carnauba

1/19/21

614

Tyed the following with Candellilla.

Carnauba
Bleached Montan
Chinese Insect Wax
Palmitic Acid Comb.
Para-phenylene Diamine
Gum Camphor
Canada Balsam
Zinc Stearate
Castor Oil
Cade Oil
Aniline Red Oil.

C1057

#615 1/20/21

Tyed the following with Cantilleva
25 grms Cantilleva, 2 grms x Prow in white
disk, 3 grms x prow in white disk, finally 5 grms
x Pour this in disk.

Para Chloraniline
Ortho toluol sulphamide
Tuvoriamine
Albumen Eggs
Perchlor benzol
Azobenzol Hydrochlorat
Benzphenol
Amido Phenol Ortho
Pyrocatechin
Dioxy naphthaline coml.
Trichlorophenol
Metatolyle diamine base
Resorcine U.S.P.
Phenanthrien Purified
Amidoazobenzole

#616 1/21/21

Tryed the following with Caroliblen same as #615

Phenol trichloride
Ortho cresol para tolnol
Acetanilid
Alpha naphthylamine Beta naphthalene
Methylbenzenol amine
Carbazol
Naphthol Alpha
Dioxy Naphthalene
Benzidin
Phenylendiamin Meta base
Benzidin base
Phenol Trichloride
Hexachloroethane
Meta toluolen diamine free base
Mono bromated Camphor
Anthrachinone

#617

Tyed the following with Candle
as #613

Monomethyl para nitro phenol
Phenanthren C.P.
Para Nitro Chlor benzol
Anthracene crude
Alpha Naptha crude
Dimethyl amidoazobenzol
Naphthylamine Alpha
Retene coml.
Nitro Aniline para pure
Haematein
Nitro Phenol para
Trichlor quinone + some
Nitro Guanidin
Guanidine Carbonate
Amidoazobenzine
Azobenzol Coml

#618 1/24/21

Tried the following with Candidum with the same portions as #613.

Para anisidin
Naphtylamine Beta
Azobenzol purified
Trichlorphenol
Benzphenol
Toluidin base
Phenylendiamin para
" pure crystals
" Meta base
Nitro toluol para
Binitro tulol para
Orthonitroparaphenetidin
Amidophenol
Monochlorophenol
Dinitrobenzole
Naphtylamine

#619 1/25/21

Tryed the following with Candelilla same portions as #613

Nitroaniline Meta pure
Methylenphenylamine
Anthracene pure
Paramido Ortho cresol
Phenanthrene
Sod. Nitro para phenolate
Rosin
Hydrochloride 6/4
Hydrazine Sulphate
Anthrachinon
Acetamido pure
Carbamid Urea
Salicin
Quinine
Amidophenol para
Casein

cus].

#620 1/26/

Tyed the following with Conditions same
fations as #613

Artificial Camphor
Shellac
Sealing Wax
Carnauba Wax
Bees Wax

1/27/21

#621

Mr Edison thinks that we have to
laugh on the Master Way and without
we working on some Specimens sent by
Mr Mallory

Weight of 5 lbs Specimens
Placing same in Ball Mill each time after
weighing.

1. Ran mill for 1 hour passed 3 1/2 lbs thru
20 mesh. 1 1/2 lb. did not pass thru too
course
2. Ran mill for 1 hr. passed 3 3/4 lbs thru
20 mesh. 1 1/4 lb did not pass thru too
course.
3. Ran mill for 1 hr. passed 3 lbs 14 oz thru
20 mesh 1 lb. 2 oz.

Total 3 hours

1/28/21

#622

Weight 5 lbs Spodumene
Placing same in Ball mill grind and weight thru 20 mesh and then putting all back in ball mill.

1. Ran mill for 15 minutes passed 2½ lbs thru 20 mesh. 2½ lbs too course to pass thru.
2. Ran mill 15 min. passed 2 lbs. 14 ozs thru 20 mesh. 2 lbs 2 ozs to course.
3. Ran mill 15 min. passed 3 lbs thru 20 mesh 2 lbs too course to pass thru.
4. Ran mill 15 min. passed 3 lbs 2 oz passed thru 20 mesh. 1 lb. 14 ozs was to course.
5. Ran mill 15 min. 3 lbs 4 oz passed thru 20 mesh. 1 lb 12 ozs was to course.
6. Ran mill 15 min. 3½ lbs passed thru 20 mesh 1½ lb was too course to pass thru 20 mesh.
7. Ran mill 15 min. 3 lbs 10 ozs passed thru 20 mesh. 1 lb. 6 oz was to course.
8. Ran mill 15 min. 3¾ lbs passed thru 20 mesh 1¼ was too course.
9. Ran mill 15 min. 3 lbs 12½ ozs passed thru 20 mesh. 1 lb. 3½ ozs was to course.
10. Ran mill 15 min. 3 lbs 13½ ozs passed thru 20 mesh. 1 lb. 2½ ozs was to course.
11. Ran mill 15 min. 3 lbs 14 ozs passed thru 20 mesh. 1 lb. 2 ozs was to course
12. Ran mill 15 min. 3 lbs 14 ozs passed thru

20 mesh. 1 lb. 2 ozs was to come.
13. Ran mill 15 min. 3 lbs 14 1/2 ozs passed thru 20 mesh. 1 lb. 1 1/2 ozs was to come

Total 3 1/4 hours

#623 1/29/2

Sphalerite Expts.

Weight up 5 lbs Sphalerite
Placed same in Ball mill and do the same as #621 using 50 mesh instead of 20

1. Passed 3/4 lb thru 50 mesh then ran mill.
2. Ran mill for 1 hour passed 1 3/4 lbs thru 50 mesh. 2 1/2 lbs still to grind.
3. Ran mill for 1 hr. passed 1 lb. thru 50 mesh 1 1/2 still left to grind.
4. Ran mill for 1 hr. 3/4 lb passed thru 50 mesh leaving 3/4 lb. to grind.
5. Ran mill for 1 hr. 9 ozs passed thru 50 mesh leaving 3 ozs to grind.

#624 1/31/2

Sperbarmene Experts.

Weight of 5 lbs Sperbarmene

Placed same in Ball mill between 50 mesh instead of 20 mesh.

1. Ran mill for 1 hour with Steel balls passed 2 lbs 6 ozs thru 50 mesh leaving 2 lbs. 6 ozs to grind.
2. Ran mill for 1 hr. with Steel balls passed 1 lb. 9 ozs thru 50 mesh leaving 1 lb. 1 oz to grind.
3. Ran mill for 1 hr. passed 3/4 lb. thru 50 mesh leaving 5 ozs left to grind.
4. Ran mill for 1 hour passed thru 1 oz leaving 4 ozs to grind.
5. Ran mill for 1 hr. passed 1 oz thru 50 mesh leaving 3 ozs to grind.

Total 5 hours

Note:-

Mr Edison said ~~that~~ the course ~~that~~ was left was mostly Quartz but still have quite some Sperbarmene left.

2/1/21

#625

Sfobumene Eights.

Weight 15 lbs Sfobumene passing thru the following mesh without any grinding whatever. direct from bags.

Results

180 mesh		2 grs
150 "		2 grs
130 "		1 oz
100 "		2 grs
70 "		2 grs
50 "		4 grs
20 "		8 grs
10 "		11 grs
1/4" "		1 lb. 10 grs
#1 Pile	1/4" 1/4"	1 lb. 13 grs
2 "	3/8" 1/4"	1 lb 14 grs
3 "	1/2" 1/2"	12 grs
4 "	1" 3/4"	11 grs
5 "	1 1/2" 3/4"	1 lb. 4 grs
6 "	2" 2"	2 lbs 5 grs
7 "	2 1/2" 2"	1 lb. 4 grs
8 "	3 1/2" 3"	2 lbs 12 grs

2/2/21

#626

Specimens Tests.

Weight 15 lbs Specimens passing thru the following mesh without any grinding whatever, direct from bags.

Results

180 mesh		3 gr
150 "		3 gr
130 "		1 gr
100 "		2 gr
70 "		2 gr
50 "		5 gr
20 "		14 gr
10 "		1 lb. 11 gr
1/4 "		3 lbs 8 gr
#1. Pile	1/4" × 1/4"	
2 "	3/8" × 1/4"	
3 "	1/2" × 1/2"	
4 "	1" × 3/4"	
5 "	1 1/4" × 1"	
6 "	1 1/4" × 1 1/4	
7 "	2 1/2" × 1 1/2"	
8 "	3" × 1 1/2"	

#627

Sporomene [illegible]

In accordance with Mr E. instructions weighed 40 grms of 50 mesh Sporomene, 2 grms of Caustic Lime placed same in a large tumbler on hot plate for 75 hours. Also did the same with the following 40 grms Sporomene (50 mesh) 4 grms Lime

40	"	"	8	"	"
40	"	"	16	"	"
40	"	"	24	"	"
40	"	"	40	"	"

Kept water about 1" from top of glass.

C(3)J

7/7/21

#628

Specimen Plate

In accordance with Mr C. instructions weighed
40 grms 50 mesh Chromite, 20 grms Soda
ash solution out of lime and poured into
small test cylinder from the Storage Battery
Neck about 1/4" of Stem Cut, put specimen
to stay on Hot Plate for 75 hours.

#629 2/5/21

Sparbrunnen Eglitz

Duplicated #627 only use smaller test cylinder from Storage Batting instead of Mass Tumblers.

#630 2/7/21

Specimens Exhibit

Duplicated #627 only use 100 mesh instead 150 mesh placed same in small test tubes from Storage Bottling.

631 2/6/21

Spodumene Expt

Ground up 5 lbs Spodumene from a
natural Sample and passed 200 gms each
, 100, 150, 180 mesh for Mr Coburn use.

#632 3/1/21

Master Wax

[illegible] the following on the Master Wax Expt.

1. White Ceresin
2. Candellera
3. Bayberry Wax
4. Japan "
5. Paraffine
6. Stearate of Lead
7. Palmitate of Aluminum
8. Stearic Acid
9. Stearate Aluminum
10. Zinc Stearate
11. Magnesium "
12. Nickel "
13. Cerium "
14. Antimony "
15. Spermaceti
16. Brown Carnauba
17. Carnauba

Results

[illegible]ind that 50 gms Stearate of Lead
50 " Stearic Acid
[illegible]ave "Very Good" can get a fine cut, does not stick to disk and feel sure that this will make a good Master.

3/2/21

#633

Graphite

did the following on breaking up the Graphite
the Disc Record.

1. Fused 30 grms NaOH in a small Nickel Crucible and added 15 grms Graphite allow to cool down and then wash with strong Hydrochloric Acid C.P. then tested for Iron and when found free add distill water until Red and Blue Litmus paper show no sign of changing color.

2. Fused 50 grms NaOH the same as #1 everything the same.

3. Fused 50 grms NaOH the same as #2 but when having NaOH and Graphite in a liquid form pour into a large Jar of Cold water and then follow the same steps as #1.

Results

#2 and 3 turned out Very Good and I think Mr Edison will adopt some method for the Disc Record.

#634 3/3/21

Master Wax.

Made a lot of Wax containing:-
50 grms Stearate of Lead and 50 grms
Stearic Acid with 10 grms of the following

1. Candellila
2. Japan Wax
3. Ffeegmaenti
4. Chinese Wax
5. Brown Carnauba
6. Carnauba
7. Bleached Montan
8.

#635 3/4/21

Master Way

find the Master $CaSO_4$ Solution
has No effect on Stearate of Lead.

3-7-21

636

Graphite Expts.

4. 50 grms NaOH
50 " Dixons Graphite

Fused together in Nickel Crucible,
poured into a Jar of Cold Water

Results

Turned out Very Good, Graphite flakes
very fine.

3-15-21

#637.

Master Wax.

Had the following mailed into Reg. Master down at Wax Division at Silver Lake

100 parts Stearate of Lead, 100 parts Stearic Acid
100 " " " 80
100 " " " 120
100 " " " 100
100 " " " 80
100 " " " 120
100 Stearate Pb, 100 Stearic Acid, 10 Bleached Montan
100 " 100 " " 10 " "
100 Stearate Pb, 100 Stearic Acid, NOT CHILLED
100 " " , 100 " " " "

Results

A-1, B, B-1, C & C-1, Show signs of stars it seems to me that material was not poured at the proper time.

& D-1, Turned out Very Good, A Little soft.

& E-1, Turned out Very Good, Has a very good cut, had some Music put on and seems to be just the thing we are after.

(151)

3-16-21

#638

Wax Expts

Made a square box, lined with tin and had an overflow hole cut in one side in order to pour wax the same method as Geiler Lake with flowing water in order that the moulds might be chilled quickly, without showing signs of cracking. Bought a dog Tin Dishes, use instead of Bottles dishes.

View of Box showing how Wax is moulded and how it is chilled.

3-17-21

#639

Wax Effects.

Made the following Wax Moulder using the New Box to Chill moulder with.

50 gms Stearate of Lead with the following

A.	10 gms	Stearic	Acid		Cuts Good, has slight cracks
B.	20 "	"	"		
C.	30 "	"	"		N.G CRACKED.
D.	40 "	"	"		
E.	55 "	"	"		
F.	70 "	"	"		
G.	85 "	"	"		
H.	100 "	"	"		
I.	115 "	"	"		
J.	150 "	"	"		

3-17-21

#640

Wax Effects

ade the following Effects on the wax:

melted #639 only added

5 grms Carbon. Very good, only cracked after pouring it

FAIR

N.G

CRACKED

3-18-21

#641

Wax Effects

Made the following Effects on the Mantle Wax using the same mantles as #640 and remelted adding 5 gms Ceresin.

Results

1-2	10 gms	Ceresin	Good effect on bottom when it was chilled. OK. if not chilled. J.A.E.
2-2	"	"	
3-2	"	"	N.G CRACKED
4-2	"	"	
5-2	"	"	
6-2	"	"	
7-2	"	"	
8-2	"	"	
9-2	"	"	

3-18/21

#642

Wax Expts.

Made the following Expts on the Master Wax only added 5 gms more of Ceresin to #641 making a total of 15 gms Ceresin

Results

.3	15 gms.	Ceresin	Cuts Very Good, only show sign of slight cracks on bottom.
.3	"	"	
.3	"	"	No GOOD. CRACKED
.3	"	"	
.3	"	"	
.3	"	"	
.3	"	"	
.3	"	"	
.3	"	"	
.3	"	"	

3-19-21

#643

Wax Exptes

Made the following Exptes on the Moston Way using the same moulds but remelted #642 and added 5 gms more Ceresin

Results

A-4	20 gms	Ceresin	Cuts Very Good, only slight cracks appear on the bottom
B-4	"	"	
C-4	"	"	Mr Edison says that these are all too soft.
D-4	"	"	
E-4	"	"	
F-4	"	"	
G-4	"	"	
H-4	"	"	
I-4	"	"	
J-4	"	"	

3-21-21

#644

Wax Exp'ts

Made the following Exp'ts on the Master Wax. using the same mould as #643 only remelted adding 10 gms Brown Carauba.

Results.

							10 B. Carauba
.5	50 gms	Stearate Pb.	10 gms	Stearic Acid	20 gms	Cresoid	
.5	"	"	20	"	"	"	
.5	"	"	30	"	"	"	
.5	"	"	40			"	
.5	"	"	55			"	N. G.
.5	"	"	70				CRACKED
.5	"	"	85	"	"	"	
.5	"	"	100	"	"	"	
.5	"	"	115	"	"	"	
.5	"	"	150	"	"	"	

.5 and B.S. Costs Very Good. Mr Edison said that the Top was OK. only the bottom show slight cracks.

(115)

3-22-21

#645

Wax Expts

For the following Expts with different Stearates on the Master Wax.

Results

1.	50 gms	Stearate	of Lead,	15	Stearate	of Zinc
2.	"	"	"	15	"	of Magnesium
3.	"	"	"	15	"	of Thallium
4.	"	"	"	15	"	of Calcium
5.	"	"	"	10 gms	Phenol	
6.	"	"	"	20	"	"
7.	"	"	"	40	"	"
8.	"	"	"	60	"	"

N.G.

3/24/21

#646
Wax Expts.

Tried the following using Candellilla Wax as the Base.

			Results
50	grms	Candellilla	Too Hard
10	"	Chinese Wax	
50	"	Carn.	Too Hard
20	"	Chinese Wax	
50	"	Carn.	Too Hard
30	"	Chinese Wax	
50	"	Carn.	Too Hard
40	"	Chinese Wax	
50	"	Carn.	Too Hard
50	"	Chinese Wax	
50	"	Carn	* Both Ways
10	"	Ceresin	Very Good
50	"	Carn	* Both Ways
20	"	Ceresin	Very Good
50	"	Carn	* Both Ways
30	"	Ceresin	Very Good
50	"	Carn	Too Soft
40	"	Ceresin	
50	"	Carn	Too Soft
50	"	Ceresin	
50	"	Carn	Too Soft
10	"	Stearine	

3/25/21

#647

Wax Softs

50 gms		Candellia	Too Soft
20 "		Stearine	
50 "		Cand.	Too Soft
30 "		Stearine	
50 "		Cand.	Too Soft
40 "		Stearine	
50 "		Cand.	Too Soft
50 "		Stearine	
50 "		Cand.	Too Soft
10 "		Japan Wax	
50 "		Cand.	Too Soft
20 "		Japan Wax	
50 "		Cand.	Too Soft
30 "		Japan Wax	
50 "		Cand.	Too Soft
40 "		Japan Wax	
50 "		Cand.	Too Soft
50 "		Japan Wax	
50 "		Cand.	* CHILLED
10 "		Bleached Mountan	
50 "		Cand.	* CHILLED
20 "		Bleached Mountan	
50 "		Cand.	* CHILLED
30 "		Bleached Mountan	
50 "		Cand.	* CHILLED
40 "		Bleached Mountan	BOTH WAYS

61717

3/30/21

#648

Wax Expts

5.	50 gms	Candellin	N.G.
	50 "	Bleached Montan	
6	50	Cand.	N.G
	10	Stearic Acid	
7.	50	Cand	N.G
	20	Stearic Acid	
8.	50	Cand	N.G.
	30	Stearic Acid	
9.	50	Cand	N.G.
	40	Stearic Acid	
10.	50	Cand	N.G.
	50	Stearic Acid	
11.	50	Cand	Very Soft
	10	Bayberry Wax	
12.	50	Cand	Very Soft
	20	Bayberry Wax	
13.	50	Cand	Very Soft
	30	Bayberry Wax	
14.	50	Cand	Very Soft
	40	Bayberry Wax	
15.	50	Cand	Very Soft
	50	Bayberry Wax	
16.	50	Cand. CHILLED	
	10	Brown Carnauba	
17.	50	Cand	
	20	Brown Carnauba	Very Hard

NOTES- MR EDISON THINKS THIS WOULD BE AL RIGHT WITH SOMETHING ELSE MIXED WITH IT.

3/27/21

#649

Wax Expts

1. 50 grms Candellilla
30 " Brown Carnauba
★CHILLED

THIS COMBINATION IS OK. ONLY A LITTLE HARD. SHOULD TRY ADDING SOMETHING ELSE TOO THIS MIXTURE

2. 50 grms Candellilla
40 " Brown Carnauba

Very Hard

3. 50 grms Candellilla
50 " Brown Carnauba

Very Hard

NOTE:-
★ MEANS TOO MAKE A REGULAR MASTER MOOLD DOWN AT SILVER LAKE IN THE WAX DIVISION.

#650

3/28/21

Wax Expts

Tried the following using Stearine as the Base

			Results
A	50 grms	Stearine	N.G
	10 "	Stearic Acid	
A	50 "	Stearine	N.G
	20 "	Stearic Acid	
A	50 "	Stearine	N.G
	30 "	Stearic Acid	
A	50 "	Stearine	N.G
	40 "	Stearic Acid	
A	50 "	Stearine	N.G
	50 "	Stearic Acid	
A	50 "	Stearine	★ CHILLED
	10 "	Chinese Wax	
A	50 "	Stearine	N.G
	20 "	Chinese Wax	
A	50 "	Stearine	N.G
	30 "	Chinese Wax	
A	50 "	Stearine	N.G
	40 "	Chinese Wax	
A	50 "	Stearine	N.G
	50 "	Chinese Wax	
A	50 "	Stearine	N.G
	10 "	Bayberry Wax	Too Soft

3/29/21

#651

Wax Expts

				Results
12-A	50	grms	Stearine	* CHILLED
	20	"	Bayberry Wax	
13-A	50	"	Stearine	Too Soft
	30	"	Bayberry Wax	
14-A	50	"	Stearine	Too Soft
	40	"	Bayberry Wax	
15-A	50	"	Stearine	Too Soft
	50	"	Bayberry Wax	
16-A	10	"	Brown Carnauba	N.G
	50	"	Stearine	
17-A	50	"	Stearine	N.G.
	20	"	Brown Carnauba	
18-A	50	"	Stearine	N.G
	30	"	Brown Carnauba	
19-A	50	"	Stearine	N.G
	40	"	Brown Carnauba	
20-A	50	"	Stearine	N.G
	50	"	Brown Carnauba	
21-A	50	"	Stearine	N.G
	10	"	Bleached Montan	
22-A	50	"	Stearine	N.G
	20	"	Bleached Montan	
23-A	50	"	Stearine	N.G
	30	"	Bleached Montan	

3-30/21

#652

Wax Exfts

A-A	50	grms	Stearine	N.G
	40	"	Bleached Montan	
S-A	50	"	Stearine	N.G.
	50	"	Bleached Montan	
4-A	50	"	Stearine	N.G
	10	"	Ceresin	
7-A	50	"	Stearine	N.G
	20	"	Ceresin	
5-A	50	"	Stearine	N.G
	30	"	Ceresin	
1-A	50	"	Stearine	N.G
	40	"	Ceresin	
-A	50	"	Stearine	*CHILLED
	50	"	Ceresin	
-A	50	"	Stearine	
	10	"	Candellera	
-A	50	"	Stearine	*CHILLED
	20	"	Candellera	
-A	50	"	Stearine	N.G
	30	"	Candellera	
-A	50	"	Stearine	N.G
	40	"	Candellera	
A	50	"	Stearine	N.G
	50	"	Candellera	

[101]

#653 3/31/21

Wax Eqfts

35-A	50 grms	Stearine	N.6
	50 "	Candellilla.	
36-A	50 "	Stearine	N.6
	10 "	Japan Wax	
37-A	50 "	Stearine	N.6
	20 "	Japan Wax	
38-A	50 "	Stearine	N.6.
	30 "	Japan Wax	
39-A	50 "	Stearine	N.6
	40 "	Japan Wax	
40-A	50 "	Stearine	N.6
	50 "	Japan Wax	

NOTE:-

★ MEANS TOO MAKE A REGULAR MASTER MOOLD DOWN AT SILVER LAKE IN THE WAX DIVISION.

4/1/21

654

Wax Exptn

Mailed the following Master Moulds down at Silver Lake using Stearate of Lead as the base

#F

50 Stearate of Lead * Both Ways
10 Chinese Wax SHOWS SIGNS of STARS

G

50 Stearate of Lead * SHOWS SIGNS OF "STARS"
50 Stearic Acid
10 Brown Carnauba Both Ways

H. * Both Ways

50 Stearate of Lead SHOWS SIGNS OF "STARS"
50 Stearic Acid
10 Bleached Montan

I. * Both Ways

50 Stearate of Lead FLAKY ON MACHINING
50 Stearic Acid
10 Spermaceti

NOTE:-
* MEANS CAN BE MOULDED BOTH WAYS. CHILLED AND NOT CHILLED.

4/1/21

#655

Wax Expts

Tried the following down at Silver Lake in regards to the Mastic wax moulds, had same recorded and put in to plate the regular way.

E559 - #6	50	Candellera	OK. NOT CHILLED &
	10	Ceresin	STICKY CHILLED
E560 - #7	50	Candellera	OK NOT CHILLED &
	20	Ceresin	CHILLED → STICKY
E561 - #8	50	Candellera	OK NOT CHILLED &
	30	Ceresin	CHILLED → STICKY
E562 - #21	50	Candellera	CHILLED
	10	Bleached Montan	FAIR
E563 - #22	50	Candellera	CHILLED
	20	Bleached Montan	SLIGHT TENDENCY TO CRACK.
E564 - #23	50	Candellera	CHILLED
	30	Bleached Montan	CRACKED IN MOULDING
E565 - #24	50	Candellera	★ CHILLED
	40	Bleached Montan	SLIGHT CRACKS

4/2/21

#656

Wax Expts.

Made the following Master Moulds down at Silver Lake, had same recorded and plated.

E 566 - #36	50	Candellera	CHILLED
	10	Brown Carnauba	NO GOOD
E 567 - #38	50	Candellera	CHILLED
	30	Brown Carnauba	NO GOOD
E 568 - #10A	50	Stearine	CHILLED
	50	Chinese Wax	FLAKY
E 569 - #12A	50	Stearine	CHILLED
	20	Bayberry Wax	STARS
E 570 30A	50	Stearine	CHILLED N.G
	30	Ceresin	DOESNT SEEM TO MIX.
E 571 - #32A	50	Stearine	CHILLED CUTS VERY GOOD ON EDGE
	20	Candellera	BUT MIXES POOR TOWARDS THE CENTER OF MOULD
E 572 - F	50	Stearate of Lead	* BOTH
	10	Chinese Wax	WAYS

CUTS VERY GOOD ON EDGE
BUT DOESNT MIX PROPER
TOWARD'S THE CENTER
SHOWS STARS

657

4/4/21

Wax Gifts

Made the following Master Moulds down at Silver Lake, had some recorded and plated.

E 573-*G	50	Stearate of Lead	* Both
	50	Stearic Acid	Ways
	10	Brown Carnauba	CUTS VERY GOOD ON EDGE CHILLED
		RECORDES & CUTS O.K. NOT CHILL	
E 574 H	50	Stearate of Lead	* Both
	50	Stearic Acid	Ways
	10	Bleached Montan	CUTS VERY GOOD ON EDGE CHILLED
		RECORDES & CUTS O.K. NOT CHILLED	
E 575-1	50	Stearate of Lead	* Both
	50	Stearic Acid	Ways
	10	Spermaceti	CUTS VERY GOOD ON EDGE BUT DOES'NT SEEM TO MIX PROPER TOWARD'S THE CENTER OF MOULD.

5/6/21

658

Wax Exptc

Made the following Master Moulds that seemed to Mould Very Good and throughly Wipes thru entire mould.

L - E578

600 Stearate of Lead ★
600 Stearic Acid
200 Bleached Montan

M - E579

600 Stearate of Lead ★
600 Stearic Acid
100 Bleached Montan

N - E580 ★

600 Stearate of Lead
600 Stearic Acid
150 Bleached Montan

K - E577 ★

50 Stearine
50 Ceresin

★ NOTE:- ALL THE ABOVE WAX CAN BE MOULDED EITHER CHILLED & NOT CHILLED AND GET VERY GOOD RESULTS.

659

6/4/21

Wax Expts

Made the following master moulds that seemed to fire and mould very good than the entire mould.

O-E581

1120 Stearate of Lead ★
280 Stearic Acid

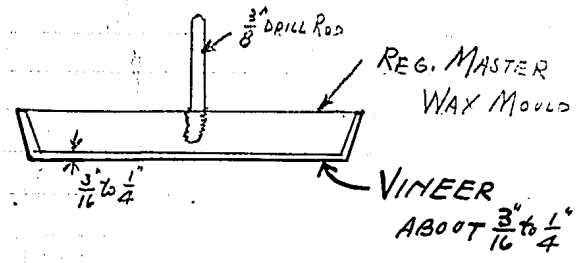
★ Note:- All the above Wax can be moulded either chilled or not chilled and get very good results.

#660

7/1/21

Wax Exptes

Mr. Edison wants to try and get a very thin Veneer on the present Master Mould after some has been shaved from the "Disc Record" It is very good and so far I am getting some fine Results



Note:-

After moulding the Veneer it seems to shell very quickly and in a short time can take a cut over already to be recorded

Weight

16 oz	1 lb
28.3 gms	1 oz
492.8 "	1 lb.

[ITEM(S) FOUND IN BOOK]

7/6/21

Hart

No 2. is slightly
louder than No 1

Surface noise
about normal -
3 or 4 snaps on
both 192 probably
due to blank

Now go ahead &
see if you can
duplicate several
& improve process
for cheap reliable Mfg. S